REMARKS

This Amendment is responsive to the Office Action dated May 2, 2008. Applicant has amended claims 1, 6, and 22, and added claim 36. Claims 16 and 33 were canceled in a previously filed Amendment. Claims 1–15, 17–32, and 34–36 are pending.

Response to Applicant's Arguments

The Office Action stated that "Applicant's arguments with respect to claims 1–35 have been considered but are considered moot in view of the new ground(s) of rejection necessitated by amendment."[1] Applicant respectfully disagrees that all of Applicant's arguments made in the Amendment filed on November 5, 2007 are moot. In the previous Office Action mailed on June 5, 2007, claims 1, 2, 8–10, 15, 16, 32, 33, and 35 were rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg (U.S. Patent No. 5,674,260, hereinafter "Weinberg '260"). In the Office Action mailed May 2, 2008, to which this Amendment provides a response, claims 1, 9, 10, 15, 18–21, 32, and 35 were rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '260. Accordingly, the Office Action mailed May 2, 2008 is maintaining the rejection of claims 1, 9, 10, 15, 32, and 35 in view of Weinberg '260. Therefore, Applicant's previously presented arguments relating to the patentability of claims 1, 9, 10, 15, 32, and 35 in view of Weinberg '260 are not moot.

Applicant respectfully requests that the Examiner provide an answer to the substance of Applicant's arguments traversing the rejection of claims 1, 9, 10, 15, 32, and 35 in view of Weinberg '260 that were presented in the previous Amendment mailed on November 5, 2007. As provided in MPEP 707.07(f), where Applicant traverses any rejection, the Examiner should, if he or she repeats the rejection, take note of Applicant's argument and answer the substance of it.

Similarly, in the previous Office Action mailed on June 5, 2007, claims 22, 23, 25, 26, and 28–35 were rejected under 35 U.S.C. § 102(e) as being anticipated by Engmark et al. (U.S. Patent Application Publication No. 2004/0082977, hereinafter "Engmark"). In the Office Action mailed May 2, 2008, the rejection of claims 22, 23, 25, 26, 28–32, 34, and 35 under 35 U.S.C. § 102(e) as being anticipated by Engmark was maintained. Therefore, Applicant's arguments made with respect to the patentability of claims 22, 23, 25, 26, 28–32, 34, and 35 in view of

[1] Office Action at p. 2.

Engmark are not moot as the Office Action mailed May 2, 2008 indicated. Applicant respectfully requests that the Examiner provide an answer to the substance of Applicant's arguments made in the previous Amendment mailed on November 5, 2007 with respect to the rejection of claims 22, 23, 25, 26, 28–32, 34, and 35 in view of Engmark.

Amendment to the Specification

Applicant has amended paragraph [0059] of Applicant's originally filed disclosure. The amendment to paragraph [0059] is fully supported by Applicant's disclosure as originally filed, such as at paragraph [0059] and FIG. 6. No new matter has been added by way of the amendment to the specification.

Claim Rejection Under 35 U.S.C. § 101

In the Office Action, claim 6 was rejected under 35 U.S.C. § 101. The Office Action stated that "the claiming of structures being in contact with or implanted within the body amounts to an inferential recitation of the body; which renders these claims non-statutory."[2] While Applicant does not necessarily agree that claim 6 as previously presented inferentially recited the body, Applicant has amended claim 6 to clarify that the housing is configured to be implanted on a surface of a cranium of a patient. Applicant respectfully request reconsideration and withdrawal of the rejection of claim 6 under 35 U.S.C. § 101.

Claim Rejection Under 35 U.S.C. § 112, second paragraph

In the Office Action, claims 1–15, 17–32, 34 and 35 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action stated that there "there is insufficient antecedent basis for" the limitation "a second profile of the housing" in independent claims 1 and 22 "since there is no description in the specification for "a second profile." Applicant respectfully disagrees with the Office Action's conclusion that claims 1–15, 17–32, 34, and 35 are indefinite under 35 U.S.C. § 112, second paragraph.

[2] Office Action at p. 2, item 1.

The scope of claims 1–15, 17–32, 34 and 35 is clear and definite. As an initial matter, Applicant notes that neither independent claim 22 nor independent claim 32 recite "a second profile of the housing." Thus, independent claims 22 and 32, as well as claims 23–31, which depend from claim 22, and claims 34 and 35, which depend from claim 32 are not indefinite by reason of reciting "a second profile of the housing."

The Office Action asserted that that claim 1 is indefinite because there is an insufficient "antecedent basis" for the claim language, "a second profile of a housing."[3] Whether or not there is "antecedent basis" for claim language is not the proper standard for determining compliance with 35 U.S.C. § 112, second paragraph. The proper consideration for determining whether claim language meets the limitations of 35 U.S.C. § 112, second paragraph is whether the claim as a whole apprises one of ordinary skill in the art of its scope.[4] According to the MPEP 2173.02, definiteness of claim language must not be analyzed in a vacuum. Instead, the definiteness of the claim language must be analyzed in light of the content of Applicant's disclosure and the claim interpretation that would be given by one possession the ordinary level of skill in the pertinent art at the time the invention was made.[5]

Applicant submits that the language of claim 1 sufficiently apprises one of ordinary skill in the art of the scope of claim 1. Applicant's claim 1 as previously presented specified that at least one of the integrated circuits or discrete components are arranged on the respective one of the first or second surfaces to substantially conform to a first predetermined non-linear profile that is based on a second profile of the housing. One having ordinary skill in the art would understand that the integrated circuits and/or discrete components are arranged on the respective surfaces in order to substantially conform to a predetermined non-linear profile that is based on a profile of a housing. The recitation of a "first profile" and a "second profile" in claim 1 is merely to distinguish between the recited profiles and to provide proper antecedent basis for the recited profiles.

A "second profile of the housing" clearly refers to a profile of a housing, which is described throughout Applicant's disclosure. For example, the disclosure describes a "low-

[3] Office Action at p. 3, item 1.
[4] MPEP 2173.02.
[5] MPEP 2173.02.

profile, concave housing."[6] In addition, Applicant's disclosure states that in some examples, "integrated circuits and/or discrete components can be arranged on [a] circuit board according to height to conform to a predetermined non-linear profile, e.g., to better conform to the concavity of the housing."[7] Claim 8 as originally filed also specifies that, "the predetermined non-linear profile comprises a profile of the housing." Applicant's disclosure provides sufficient description of a "second profile of the housing," i.e., a profile of a housing.

For at least these reasons, Applicant submits that claims 1–15, 17–32, 34, and 35 meet the limitations of 35 U.S.C. § 112, second paragraph. Reconsideration and withdrawal of the rejection of the claims under 35 U.S.C. 112, second paragraph is respectfully requested.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, claims 1–7, 8, 9, 15, 17–19, 20–22, 29, 31, 32, 34 and 35 were rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg et al. (U.S. Patent No. 5,144,946, hereinafter "Weinberg '946"). In addition, claims 1, 9, 10, 15, 18–21, 32, and 35 were rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '260. Claims 22, 23, 25, 26, 28–32, 34, and 35 were rejected under 35 U.S.C. § 102(e) as being anticipated by Engmark.

Claims 10–14, 25, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weinberg '946. Claims 11–14, 25, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weinberg '260. Claims 8, 23, and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weinberg '946 or Weinberg '260 in view of Bardy et al. (U.S. Patent Application Publication No. 2002/0042634, hereinafter "Bardy").

Applicant respectfully traverses the rejection of the claims. The cited references fail to disclose each and every feature of the claimed invention, and provide no teaching that would have suggested the desirability of modification to include such features.

[6] Applicant's disclosure at paragraph [0040].
[7] Applicant's disclosure at paragraph [0010].

Independent Claim 1

Weinberg '946

Independent claim 1 is directed to an implantable medical device (IMD) that comprises a plurality of integrated circuits, a plurality of discrete components, a circuit board that is coupled to each of the integrated circuits and discrete components, and a housing to house the circuit board, where the circuit board comprises first and second opposing surfaces, and each of the integrated circuits is located on the first surface and each of the discrete circuit components is located on the second surface. According to claim 1, at least one of the integrated circuits or discrete components are arranged on the respective one of the first or second surfaces to substantially conform to a first predetermined non-linear profile that is based on a second profile of the housing. Claim 1 as amended clarifies that the profile of the housing is non-linear.

Weinberg '946 fails to disclose or suggest the IMD of Applicant's claim 1. For example, Weinberg '946 fails to disclose or suggest an IMD that comprises integrated circuits or discrete components that are arranged on a respective one of first or second surfaces of a circuit board to substantially conform to a predetermined non-linear profile that is based on a non-linear profile of the housing. In support of the rejection of claim 1 as being anticipated by Weinberg '946, the Office Action characterized the electrical components 56 in Weinberg '946 as integrated circuits and the tantalum capacitor 57 as a discrete component.[8] According to the Office Action, FIGS. 4A and 4B illustrate the electrical components 56 and capacitor 57 on opposing sides of a substrate 54, which the Office Action appears to be characterizing as a circuit board.[9] The Office Action asserted that "the electrical components are arranged in a non-linear profile with respects [sic] to the second profile of the housing since both the discrete and integrated components vary in height."[10] Based on the reasoning that the electrical components 56 are "made to fit in the housing," the Office Action concluded the profile of the electrical components 56 is "thus 'based' on the profile."[11]

Applicant respectfully disagrees that the electrical components 56 disclosed by Weinberg '946 are arranged on a surface of a circuit board to substantially conform to a predetermined non-

[8] Office Action at pp. 3–4, item 1.
[9] Office Action at p. 4, item 1.
[10] Office Action at p. 4, item 1.
[11] Office Action at p. 4, item 1.

linear profile that is based on a profile of a housing, much less a non-linear profile of a housing, as required by claim 1 as amended. Weinberg '946 fails to disclose or even suggest that the electrical components 56 are arranged on the substrate 54 to substantially conform to any particular profile. In addition, Weinberg '946 is completely silent as to any relationship between a profile of the electrical components 56 and a profile of the housing 12 that houses the substrate 54.

Contrary to the Office Action's assertions, conforming the electrical components 56 to fit in a housing does not in any suggest that the profile of the electrical components 56 is based on a profile of the housing 54 of Weinberg '946. The profile of the electrical components in Weinburg '946 is not in any respect similar to that of the housing of the Weinberg '946 device. Weinberg '946 does not disclose or even suggest that the electrical components 56 have any particular profile, thus, it is unclear how Weinberg '946 discloses that the electrical components 56 are arranged on the substrate 54 to substantially conform to a non-linear profile that is based on the profile of the housing 12 that houses the substrate 54.

Applicant's independent claim 1 is not merely directed at an IMD that includes integrated circuits or discrete components located on respective surfaces of a circuit board, where the circuit board, integrated circuits, and discrete components are "made to fit" within a housing. In addition, claim 1 is not directed at an IMD that includes an arrangement of integrated circuits or discrete components that substantially conforms to any non-linear profile. Instead, claim 1 requires the integrated circuits and/or discrete components to be arranged to substantially conform to a specific profile, i.e., a predetermined non-linear profile, where the specific profile is based on a non-linear profile of the housing that houses the circuit board. In an example provided in Applicant's disclosure, integrated circuits and/or discrete components may be arranged on a circuit board according to height to conform to a predetermined non-linear profile, e.g., to better conform to the concavity of a housing.[12] Conforming the electrical components 56 of Weinberg '946 to fit in a housing 12 does not necessarily require a consideration of a specific profile of the electrical components 56 or a consideration of a non-linear profile of the housing 12.

[12] Applicant's disclosure at paragraph [0010].

Given the lack of disclosure in Weinberg '946, the Office Action appears to be relying on an improper finding of an inherent disclosure in Weinberg '946 to support the rejection of claim 1. The fact that a certain characteristic may be present in the prior art is not sufficient to establish the inherency of that result or characteristic.[13] The Office Action must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.[14] No reasonable support has been provided for the determination that electrical components 56 described by Weinberg '946 are necessarily arranged to substantially conform to a first predetermined non-linear profile that is based on a profile of the housing 12 based on the mere fact that the electrical components 56 fit within the housing 12. Rather, other profiles of the electrical components 56 that are independent of the profile of the housing 12 are just as likely in view of the lack of description provided by the Weinberg '946 reference.

It appears that from the figures of Weinberg '946 cited by the Office Action, the electrical components 56 may be arranged in any particular way on the substrate 54 and still fit within the housing 12. Accordingly, fitting the electrical components 56 within the housing 12 does not appear to be a consideration for the arrangement of the electrical components 56 on the substrate. Moreover, Weinberg '946 would not even suggest an arrangement of the electrical components 56 that is required to fit within the housing 12 because any arrangement of the components 56 of Weinberg '946 device on the substrate 54 would fit in the housing 12 of Weinberg '946.

For at least these reasons, Weinberg '946 neither discloses nor suggests each and every element of Applicant's claim 1.

Weinberg '260

Weinberg '260 also fails to disclose each and every limitation set forth in independent claim 1. In support of the rejection of claim 1 as being anticipated by Weinberg '260, the Office Action characterized the platform 36 and substrate 38 described by Weinberg '260 as a circuit board.[15] In particular, the Office Action found that FIG. 3 of Weinberg illustrates "a group of integrated circuits 34 . . . mounted atop a platform 36" and "[u]nderneath the platform 36 are

[13] *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ.2d 1955, 1957 (Fed. Cir. 1993); MPEP § 2112.
[14] *Ex parte Levy*, 17 USPQ.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original); MPEP 2112.
[15] Office Action at p. 5, item 2.

additional electronic components . . . which are mounted to a substrate 38 and which communicate with the integrated circuits 34."[16]

Applicant respectfully disagrees that the platform 36 and substrate 38 define a circuit board. Furthermore, even if the platform 36 and substrate 38 define a circuit board, Weinberg '260 still fails to disclose or even suggest that the integrated circuits 34 or electronic components are arranged on the platform 36 and substrate 38 to substantially conform to a predetermined non-linear profile that is based on a non-linear profile of a housing that houses the platform 36 and substrate 38. As with Weinberg '946, Weinberg '260 is completely silent as to any relationship between a profile of the integrated circuits 34 or electronic components on the platform 36 and substrate 38 and a profile of an of the housing that houses the first and second surfaces platform 36 and substrate 38.

The Office Action reasoned that because the "integrated circuits 34 are mounted on a platform . . . compared to the integrated circuit 40, they are in a non-linear profile based on a second profile of the housing." The Office Action specifically stated that "[s]ince they are made to fit in the housing and are thus "based" on the profile." For at least the reasons discussed above with respect to Weinberg '946, the fact that the integrated circuits 34, 40 are "made to fit in the housing" does not in any way suggest that they are arranged to substantially conform to any particular non-linear profile.

Moreover, even if the integrated circuits 34, 40 are located on a circuit board that fits within a housing, it does not necessarily follow that there is a relationship between a profile with which the integrated circuits 34, 40 are arranged to conform and a profile of a housing. It appears that from the figures of Weinberg '260, the integrated circuits 34, 40 may be arranged in any particular on the platform 36 and substrate 38 and still fit within the housing 12. In particular, the integrated circuits 34, 40 are part of an electronics package 30 having a lid 32. As shown in FIG. 3 of Weinberg '260, the lid 32, the substrate 38, and platform 36 define an electronics package 30 having a particular size that fits within the housing 12 of the Weinberg '260 device. Accordingly, fitting the integrated circuits 34, 40 within the housing 12 does not appear to be a consideration for the arrangement of the integrated circuits 34, 40 on the platform 36 and substrate 38. Moreover, Weinberg '260 would not even suggest an arrangement of the

[16] Office Action at p. 5, item 2.

integrated circuits 34, 40 that is required to fit within the housing 12 because any arrangement of the integrated circuits 34, 40 of Weinberg '260 device on the substrate 54 would fit in the housing 12 of Weinberg '260.

Independent claim 1 requires a specific relationship between a profile with which integrated circuits and/or discrete components are arranged to substantially conform to and a profile of a housing. Weinberg '260 fails to disclose or suggest that its integrated circuits 34, 40 or electrical components are arranged in any specific profile. For at least these reasons, Weinberg '260 neither discloses nor suggests each and every element of Applicant's claim 1.

Independent Claim 22

Weinberg '946

Independent claim 22 is directed to an IMD that comprises a circuit board, a telemetry coil that encircles the circuit board, and a housing to house the circuit board and the telemetry coil. According to claim 22 as amended, the circuit board is located substantially within a first plane and the telemetry coil is located substantially within a second plane that is different than the first plane, the first and second planes are substantially parallel, and the telemetry coil is substantially unclipsed by the circuit board in a direction substantially perpendicular to at least one of the first or second planes.

Independent claim 22 was rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '946. Applicant respectfully disagrees that Weinberg '946 discloses each and every element of Applicant's independent claim 22. While the Office Action noted that Weinberg '946 discloses a telemetry coil 59 and asserted that the telemetry coil 59 encircles a substrate 54,[17] which the Office Action appeared to characterize as a "circuit board," the Office Action failed to address the requirements of independent claim 22. Accordingly, The Office Action failed to meet the burden of demonstrating how Weinberg '946 anticipates claim 22.

As provided in 37 C.F.R. 1.104(c) (2), the Examiner must designate the particular part of a reference as nearly as practicable. However, with respect to claims 22, as well as many of the dependent claims, the Examiner has failed to do so. The Office Action does not explain how Weinberg '946 discloses an IMD including a telemetry coil and a housing in different planes,

[17] Office Action at p. 4.

where the telemetry coil is substantially uneclipsed by the circuit board in a direction substantially perpendicular to at least one of the first or second planes. Thus, on at least the basis that the Office Action failed to meet the burden of demonstrating that Weinberg '946 discloses each and every element of claim 22, Applicant respectfully requests clarification of the rejection of claim 22 or withdrawal of the rejection.

Even if the substrate 54 disclosed by Weinberg '946 is a circuit board, an assertion with which Applicant does not necessary agree, the telemetry coil 59 disclosed by Weinberg '946 is not substantially uneclipsed by the substrate 54. Instead, as illustrated in FIG. 4B of Weinberg '946, the telemetry coil 59 is completely eclipsed by the substrate 54. In addition, as illustrated in FIG 4A, the substrate 54 appears to extend past the telemetry coil 59, further indicating that Weinberg '946 discloses an IMD in which such that the telemetry coil 59 is completely eclipsed by the substrate 54. Weinberg '946 does not provide any description to support the Office Action's assertion that Weinberg '260 discloses an IMD in which the telemetry coil 59 is substantially uneclipsed by the circuit board in a direction substantially perpendicular to at least one of the planes in which the telemetry coil 59 and substrate 57 are located. In addition, it does not necessarily follow that the telemetry coil 59 in Weinberg '946 is substantially uneclipsed by the substrate 54, particularly given the lack of disclosure and FIGS. 4A and 4B, which indicate otherwise.

For at least these reasons, Weinberg '260 neither discloses nor suggests each and every element of Applicant's independent claim 22.

Engmark

Engmark also fails to anticipate Applicant's independent claim 22. For example, Engmark fails to disclose or suggest an IMD comprising a circuit board and a telemetry coil that encircles the circuit board, where the circuit board is located substantially within a first plane, the telemetry coil is located substantially within a second plane that is substantially parallel to the first plane, and the telemetry coil is substantially uneclipsed by the circuit board in a direction substantially perpendicular to at least one of the first or second planes, as required by Applicant's independent claim 22.

In support of the rejection of claim 22, the Office Action asserted that, "as depicted in figure 8 [of Engmark], from the top view of the implantable system, the telemetry coil 32 is located in the second plane and is substantially uneclipsed by the circuit board 27 located in the first plane, wherein the two planes are parallel to each other, thus resulting in no eclipse. In a perpendicular direction to either the first plane or second plane."[18] Applicant respectfully disagrees that FIG. 8 of Engmark illustrates such an arrangement between the telemetry coil 32 and circuit board 27.

Applicant disagrees with the Office Action's designation of the planes in which the telemetry coil 32 and circuit board 27 of the Engmark IMD are located. As FIG. 8 (reproduced below) of Engmark clearly illustrates, the telemetry coil 32 and circuit board 27 could not be located in <u>different</u>, parallel planes such that the telemetry coil 32 and circuit board 27 do not eclipse each other in a substantially perpendicular direction to at least one of the first or second planes.

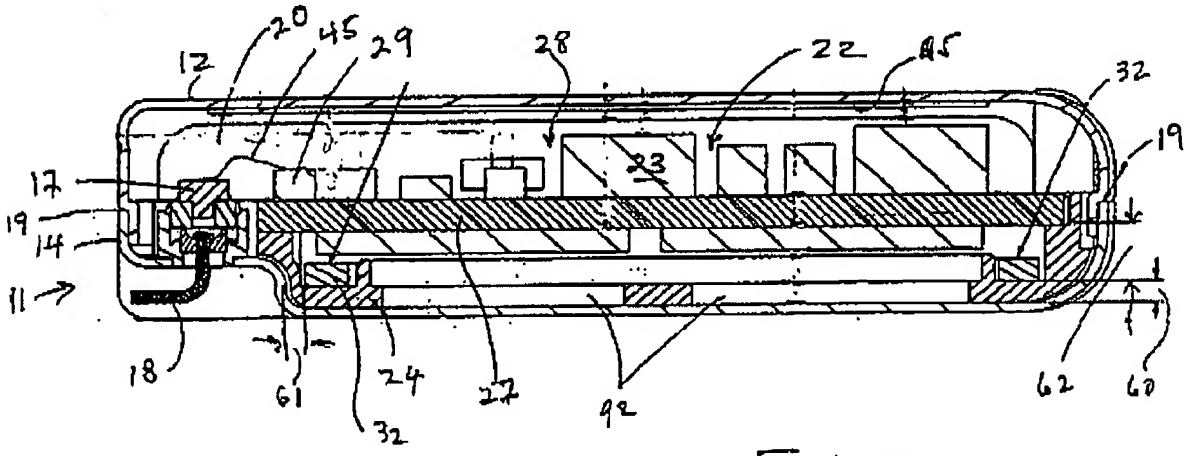

FIG. 8

Applicant agrees that the telemetry coil 32 and circuit board 27 do not appear to eclipse each other in a substantially perpendicular direction to a plane of the image shown in FIG. 8 of Engmark. However, the direction substantially perpendicular to the plane of the image shown in FIG. 8 of Engmark <u>could not</u> be a direction "substantially perpendicular to at least one of the first or second planes" in which the circuit board and telemetry coil, respectively, are located, as

[18] Office Action at p. 8, item 3.

required by Applicant's independent claim 22. Instead, the direction substantially perpendicular to the plane of the image shown in FIG. 8 is a direction substantially perpendicular to a plane in which both the circuit board 27 and telemetry coil 32 are located. That is, if a "plane" in which the circuit board 27 or the telemetry coil 32 are located is interpreted to be substantially parallel to the plane of the image shown in FIG. 8 of Engmark, the circuit board 27 would occupy all the planes that the telemetry coil 32 occupies. This contradicts Applicant's amended claim 22, which clarifies that the telemetry coil 32 and circuit board 27 are located in different planes.

Engmark neither discloses a telemetry coil that encircles a circuit board, nor a telemetry coil that is substantially uneclipsed by the circuit board in a direction substantially perpendicular to at least one of the first or second planes in which the circuit board and telemetry coil, respectively, are located. FIG. 3 illustrates a top view of the Engmark device 10 with the upper housing half 12 removed, and FIG. 4 illustrates the top view with both the upper housing half 12 and electrical module 28 removed.[19] The electrical module 28 includes the circuit board 27.[20] As FIGS. 3 and 4 of Engmark illustrate, the antenna coil 32 is not visible from the top view when the electrical module 28 is in place. The electrical module 28 covers the antenna coil 32, and therefore, antenna coil 32 does not encircle the circuit board 27, as required by Applicant's claim 22.

If the circuit board 27 and antenna coil 32 in the Engmark reference are located in substantially parallel planes, the direction substantially perpendicular to at least one of the first or second planes is shown in FIGS. 3 and 4. FIGS. 3 and 4 of Engmark illustrate the electrical module 28 covering the antenna coil 32, and, as a result, the telemetry coil in Engmark is substantially eclipsed by a circuit board in a direction substantially perpendicular to at least one of the first or second planes in which the circuit board and telemetry coil, respectively, are located. In addition, FIG. 8 clearly illustrates the circuit board 27 eclipsing the antenna coil 32 in a direction substantially perpendicular to the substantially parallel planes (i.e., the planes in which the circuit board 27 and coil 32 are located). For at least these reasons, Engmark fails to disclose or suggest each and every element of Applicant's independent claim 22 under 35 U.S.C. § 102(e).

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[19] Engmark at paragraphs [0020] and [0022].
[20] *Id.* at paragraph [0021].

Independent Claim 32

Weinberg '946

Independent claim 32 is directed to an implantable medical device comprising a housing that includes a major surface and a side surface, wherein the side surface includes a feedthrough that is oriented at a non-parallel, non-perpendicular angle relative to the major surface. Independent claim 32 was rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '946. The Office Action, however, did not specifically address independent claim 32 or explain how Weinberg '946 discloses each and every element of claim 32. With respect to the rejection of claim 15, the Office Action asserted that FIG. 2 of Weinberg '946 illustrates feedthroughs 24 that are "located at a non-parallel and non-perpendicular angle relative to a major surface of the housing." Applicant respectfully disagrees.

FIG. 2 of Weinberg '946 (an annotated copy is reproduced below) illustrates feedthroughs 24 that are located on a surface (labeled "Surface A" below) of the housing 12 that appears to be substantially perpendicular to a major surface (e.g., "Surface B" labeled below) of the housing 12, rather than substantially non-parallel, non-perpendicular.

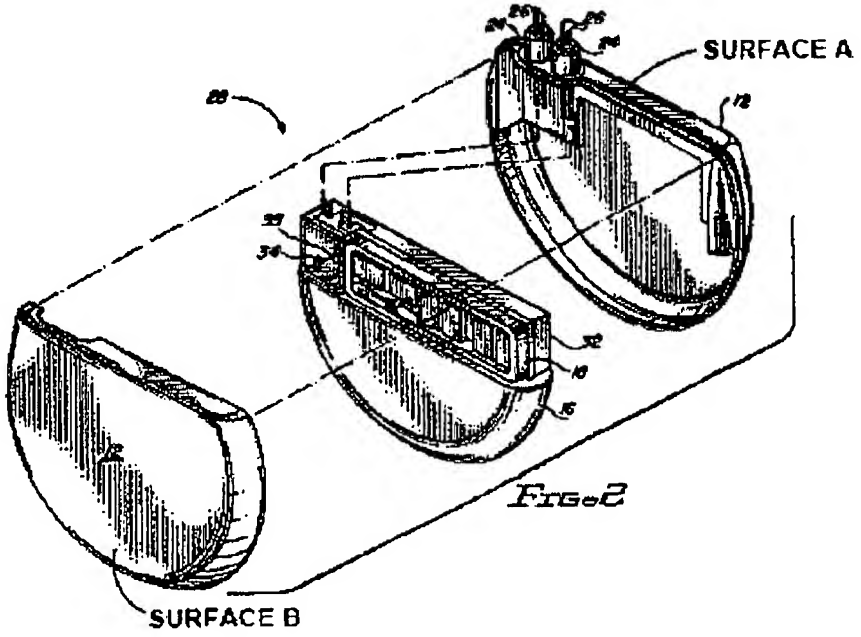

Fig-2

Other than a reference to FIG. 2, the Office Action did not provide any reasonable explanation of how Weinberg '946 discloses that a side surface of the housing 12 includes a feedthrough that is oriented at a non-parallel, non-perpendicular angle relative to a major surface of the housing 12. Weinberg '946 does not describe the orientation of the feedthroughs 24 on the housing 12.

For at least these reasons, the Office Action has failed to demonstrate that Weinberg '260 discloses or suggests each and every element of Applicant's independent claim 32.

Weinberg '260

Independent claim 32 was also rejected as being anticipated by Weinberg '260. In support of the rejection of claim 32, Office Action concluded that Weinberg '260 discloses a feedthrough that is located in an electronic package 30 to enable a wire connection to a resistor board 68 via wires 70.[21] The Office Action included a modified copy of FIG. 5 of Weinberg '260 that included a "box placed around a portion of the implantable medical device [that] indicates 'a major surface of the housing' that is at 'a non-parallel, nonperpendicular angle' from the feedthrough."[22] Applicant has copied the modified drawing of FIG. 5 from the Office Action below.

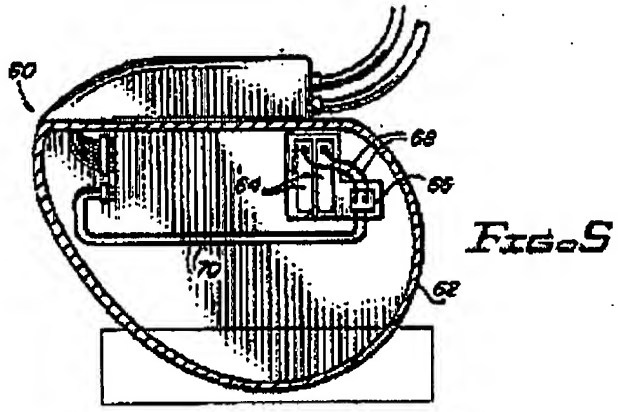

Fig. 5

[21] Office Action at p. 7.
[22] *Id.*

Applicant respectfully disagrees with the Office Action's analysis of Weinberg '260. Weinberg '260 does not mention a feedthrough, and the Office Action appears to be relying on an improper finding of an inherent disclosure to support the rejection of independent claim 32 (as well as the rejection of claims 15, 16, 18, 33, and 35). As described above, the fact that a certain characteristic may be present in the prior art is not sufficient to establish the inherency of that result or characteristic.[23] The Office Action must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.[24]

No reasonable support has been provided for the determination that Weinberg discloses a feedthrough, much less a feedthrough that is oriented at a non-parallel, non-perpendicular angle relative to a major surface of a housing of the medical device. Applicant submits that the allegedly inherent characteristic does not necessarily flow from the teachings of Weinberg '260. Both the resistor board and electronics package are located within the Weinberg '260 device housing and Weinberg '260 does not suggest that these elements are separated by some other housing. Rather, FIGS. 3, 6, and 7 of Weinberg '260 illustrate an electronics package 30 that includes exposed electrical components 72. Weinberg '260 does not disclose that the exposed electrical components 72 and resister board 68 are separated by a housing, and, accordingly, the electronics package does not necessarily include a feedthrough "to enable a wire connection to the resistor board,"[25] as alleged by the Office Action. In other words, it does not appear that a feedthrough would be required to electrically couple the electronics package and resistor board 68. Consequently, a person of ordinary skill certainly would not consider a feedthrough to be necessarily present in the Weinberg '260 device.

In addition, it is unclear how the box drawn around a portion of the implantable medical device (see the modified FIG. 5 copied above) indicates a major surface of the housing that is at a non-parallel, non-perpendicular angle from any feedthrough. First, Weinberg '260 does not even mention a feedthrough, much less illustrate an orientation of the feedthrough relative to the box drawn by the Examiner in FIG. 5. Thus, Weinberg '260 cannot teach a feedthrough that has the claimed orientation relative to the major surface of the housing. Second, Applicant respectfully

[23] *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ.2d 1955, 1957 (Fed. Cir. 1993); MPEP § 2112.
[24] *Ex parte Levy*, 17 USPQ.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original); MPEP 2112.
[25] Office Action at page 5.

traverses the designation of the portion of the device in the box as a "major surface of the housing." It is unclear to what portion the Office Action is referring to as the major surface, and on what reasoning the Office Action is relying on to designate the portion as a major surface of the housing. Weinberg '260 cannot anticipate each and every element of independent claim 32 because Weinberg '260 fails to disclose a feedthrough or even a relationship between a feedthrough and a housing of the medical device.

Engmark

Engmark also fails to anticipate Applicant's independent claim 32. In support of the rejection of claim 32, the Office Action merely quoted portions of Engmark without further explanation. In particular, the Office Action stated:

> As to claims 32 and 34-35, "Circuit board 27 of module 28 includes metal contact areas 29 that are conveniently electrically coupled to inner portions 17 of one or more electrical feed-throughs 16 of device 10"(page 2, paragraph 21). "One or more feed-through connectors permit electrical communication to and from the electrical components and circuitry contained within the housing while at the same time maintaining the hermeticity of the device" (page 1, paragraph 3).

The Office Action appears to be characterizing the electrical feedthroughs 16 of Engmark as a feedthrough located on the side surface of a device housing 11. However, as shown in FIG. 1 of Engmark, the feedthroughs 16 of the Engmark device are located on a major surface of the housing 11 rather than a side surface. Moreover, the feedthroughs 16 are not oriented at a non-parallel, non-perpendicular angle relative to the major surface of the housing 11. Engmark does not disclose the orientation of the feedthroughs 16 relative to a major surface of the housing 11. Therefore, Engmark does not disclose each and every element of independent claim 32.

Dependent Claims

Claims 2–15 and 17–21 depend from independent claim 1, claims 23–31 depend from independent claim 22, and claims 34 and 35 depend from independent claim 32. Claims 2–15, 17–21, 23–31, 34, and 35 and are patentable over the cited references for at least the reasons provided above with respect to independent claims 1, 22, and 32. In addition, the dependent

claims recite additional elements that are neither disclosed nor suggested by the cited art. Applicant addresses some of the dependent claims below for purposes of illustration.

Claim 7 states that the housing of claim 1 includes a central portion and a taper portion, where the circuit board is located within the central portion and a telemetry coil is located within the taper portion. Claim 7 was rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '946. While the Office Action noted that Weinberg '946 discloses a telemetry coil 59, the Office Action failed to meet the burden of demonstrating how Weinberg '946 anticipates claim 7. The Office Action does not explain how Weinberg '946 discloses a housing that defines a central portion and a taper portion, much less an IMD in which a circuit board is located within the central portion and a telemetry coil is located within the taper portion. Thus, on at least the failure of the Office Action to meet the burden of demonstrating that Weinberg '946 discloses each and every element of claim 7, Applicant respectfully requests clarification of the rejection of claim 7 or withdrawal of the rejection.

Weinberg '946 fails to disclose or suggest a housing that defines a central portion and a taper portion, and, therefore, does not anticipate claim 7. As shown in FIG. 2 of Weinberg '946, the housing 12 does not define a central portion and a taper portion. Moreover, the electronics package 18, of which the substrate 54 (the "circuit board" according to the Office Action) and the telemetry coil 59 are not arranged in a central portion and a taper portion, respectively, of any housing of the Weinberg '946 pacemaker.

Claim 8 specifies that the integrated circuits and/or discrete components of claim 1 are arranged on respective surfaces of a circuit board to substantially conform to a first predetermined non-linear profile that comprises a second non-linear profile of the housing that houses the circuit board. Claim 8 was rejected under 35 U.S.C. § 102(b) as being anticipated by Weinberg '946. However, just as with claim 8, the Office Action fails to provide any explanation of how Weinberg '946 discloses or suggests each and every element of claim 8. The Office Action failed to meet the burden of demonstrating that Weinberg '946 discloses each and every element of claim 8. Applicant respectfully requests clarification of the rejection of claim 8 or withdrawal of the rejection.

Claim 8 requires the housing of the IMD that houses the circuit board to have a non-linear profile, and the integrated circuits and/or discrete components to be arranged on a circuit board to

substantially conform to the non-linear profile of the housing. Weinberg '946 fails to disclose or suggest that the electrical components 56 of its pacemaker are arranged in a predetermined non-linear profile. Even if the electrical components 56 are arranged in a predetermined non-linear profile, as asserted by the Office Action, Weinberg '946 does not suggest that the profile of electrical components 56 comprises a profile of the housing 12. FIG. 2 of Weinberg '946 suggests that the electrical components 56 and housing 12 either have the same linear profile or have different profiles, to the extent that the electrical components 56 are arranged in a non-linear profile. Regardless of the profile of the electrical components 56 of the Weinberg '946 pacemaker, the electrical components 56 do not have a profile that comprises a non-linear profile of the housing 12. Thus, Weinberg '946 fails to render claim 8 nonpatentable.

Claim 10 requires the discrete components of claim 1 to be arranged on the second surface of the circuit board such that the heights of the discrete components predominantly decrease from an edge of the second surface of the circuit board to a center of the second surface of the circuit board. With respect to the rejection of claim 10 as being obvious in view of Weinberg '946, the Office Action stated that, "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the positioning of the discrete components, since it has been held that rearranging parts of an invention only involves routine skill in the art."[26] The Office Action asserted that rearranging the discrete components would provide a medical device having a "narrower profile."[27] Applicant respectfully disagrees with the Office Action.

The arrangement of discrete components recited in claim 10 is not a mere "rearrangement" of parts, as the Office Action asserts. Instead, the arrangement of discrete components is a specific arrangement that is based on a non-linear profile of a housing. Given the lack of disclosure in Weinberg' 946 relating to the arrangement of the tantalum capacitors 57 of the pacemaker, which the Office Action characterized as "discrete components," or a profile of the pacemaker housing 12 it is unclear why one having ordinary skill in the art would modify the tantalum capacitors 57 to have the arrangement recited in Applicant's claim 10.

[26] Office Action at p. 10, item 1.
[27] Office Action at p. 10, item 1.

Moreover, it is unclear how rearranging the tantalum capacitors 57 of the Weinberg '946 pacemaker would result in a medical device having a "narrower profile," as asserted by the Office Action. The tantalum capacitors 57 are enclosed in a housing 12, and, accordingly, arranging the tantalum capacitors 57 of the Weinberg '946 pacemaker such that they predominantly decrease from an edge of the second surface of the circuit board to a center of the second surface of the circuit board would not change the profile of the pacemaker. Thus, arranging the tantalum capacitors 57 such that the heights of the tantalum capacitors 57 predominantly decrease from an edge of the second surface of the circuit board to a center of the second surface of the circuit board would not result in a pacemaker that "occupies less space in the patient and is less noticeable once implanted,"[28] as the Office Action suggests.

Claim 15 requires a housing to comprise a feedthrough on a side surface that is oriented at a non-parallel, non-perpendicular angle relative to a major surface of the housing. The Office Action asserted that claim 15 is anticipated by Weinberg '946 and Weinberg '260.[29] For at least the reasons discussed above with respect to independent claim 32, Weinberg '946 and Weinberg '260 fail to anticipate claim 15, as well as claims 17 and 18, which depend from claim 15.

Claim 24 recites a housing that is substantially concave in two axes and includes a central portion and a taper portion, the circuit board is located within the central portion, and the telemetry coil is located within the taper portion. Claim 24 was rejected under 35 U.S.C. § 103(a) as being obvious over Weinberg '946 or Weinberg '260 in view of Bardy. The Office Action stated that Bardy discloses a curved housing.[30] Even if this is correct, an assertion with which Applicant does not necessarily agree, nothing in Weinberg '946, Weinberg '260 or Bardy suggests an IMD including a circuit board is located within a central portion of a substantially concave housing, and a telemetry coil located within a taper portion of the housing, as required by claim 24. The Office Action failed to address these requirements of claim 24, and, accordingly, failed to meet the burden of demonstrating that claim 24 is obvious in view of the cited art. Applicant respectfully requests clarification of the rejection of claim 24 or withdrawal of the rejection.

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[28] Office Action at p. 10, item 1.
[29] Office Action at p. 4.
[30] Office Action at p. 12, item 2.

Claim 25 requires an implantable medical device with a plurality of integrated circuits and a plurality of discrete components, wherein the integrated circuits and discrete components are coupled to the circuit board, and a thickness of the circuit board including the integrated circuits and discrete components is less than or equal to 3.8 millimeters. Applicant's claim 26 requires an implantable medical device wherein a radial thickness of the housing is less than or equal to 5.2 millimeters. In support of the rejection of these claims, the Office Action cited Engmark's paragraph [0039], which describes a minimum distance between the antenna coil and the housing as well as a minimum distance between the antenna coil and the circuit board. However, Engmark does not disclose the thickness of the circuit board that includes the integrated circuits and discrete components or the thickness of the housing. Therefore, the cited passage relied on by the Office Action fails is irrelevant with regard to the requirements of claims 25 and 26. Engmark does not disclose or suggest a thickness of the circuit board including the integrated circuits and discrete components of less than or equal to 3.8 millimeters or a radial thickness of the housing of less than or equal to 5.2 millimeters, as required by Applicant's claims 25 and 26 respectively.

For at least reasons, the cited references fail to disclose or suggest each and every limitation set forth in claims 1–15, 17–32, 34, and 35. For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1–15, 17–32, 34, and 35 under 35 U.S.C. §§ 102(b) and 103(a). Reconsideration and withdrawal of the rejection of the claims is respectfully requested.

New Claims

Applicant has added claim 36 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claim, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention. As one example, the references fail to disclose or suggest an IMD that includes integrated circuits or discrete components arranged on respective surfaces of a circuit board to substantially conform to a first predetermined non-linear profile that is based on a second non-linear profile of the housing, where the second non-linear profile of the housing is substantially concave along at least one axis, as recited by claim 36. No new matter has been added by the new claim.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date: August 4, 2008

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